

What is claimed is:

1. An ACE multiplicatively indenting plunger pin comprising:

- a. a center axis substantially parallel with an impinging direction of said plunger pin;
- b. a back surface substantially rotationally symmetric with respect to said center axis, said back surface having a continuous curvature that is at a maximum radius in proximity of said center axis and decreases towards a back circumference of said plunger pin.

2. The ACE multiplicatively indenting plunger pin of claim 1, wherein said back surface seamlessly transitions into said back circumference.

3. The ACE multiplicatively indenting plunger pin of claim 1, wherein said back surface has a surface height that is at least equal to an indenting depth of said back surface in said ACE.

4. The ACE multiplicatively indenting plunger pin of claim 1, wherein said maximum radius is infinite.

5. The ACE multiplicatively indenting plunger pin of claim 1, wherein said back surface is an ellipsoid with a short axis of said ellipsoid's central cross section substantially coincides with said center axis.

6. The ACE multiplicatively indenting plunger pin of claim 1, further comprising a guide section extending along said center axis.
7. The ACE multiplicatively indenting plunger pin of claim 6, wherein said back circumference is independent of a guide circumference of said guide section.
8. The ACE multiplicatively indenting plunger pin of claim 1, further comprising a recess section having a finite length along said center axis, said recess section having a recess circumference that is offset from said guide circumference in direction towards said center axis.
9. The ACE multiplicatively indenting plunger pin of claim 6 slide ably held in a guiding perforation of a carrier frame, said guiding perforation being correspondingly shaped with said guide section such that said plunger pin slides in a guided fashion along said center axis.
10. The ACE multiplicatively indenting plunger pin of claim 9, further comprising a recess section having a finite length along said center axis, said recess section having a recess circumference that is offset from said guide circumference in direction

towards said center axis and wherein said guiding perforation further comprises a retention flange corresponding to said recess section such that said plunger pin is slide able within limits defined by the recess section minus a height of said retention flange.

11. The ACE multiplicatively indenting plunger pin of claim 10, wherein said carrier frame is of a material composition and said retention flange is in an offset from said guide circumference towards said center axis such that said retention flange may be non destructively resiliently deformed during assembly insertion of said plunger pin into said guiding perforation.

12. The ACE multiplicatively indenting plunger pin of claim 1, further comprising a pin front end having a number of crown peaks substantially rotationally symmetric arrayed with respect to said center axis.

13. A multiple testing probe apparatus comprising:  
a. a base contact;

- b. an ACE having a top and a bottom, wherein said top is in conductive contact with said base contact;
- c. a carrier frame having a guiding means extending between a top and a bottom of said carrier frame, said frame top being immediately adjacent to said ACE bottom; and
- d. a plunger pin for transmitting an electrical current, said plunger pin having:
  - a. a center axis substantially parallel with an impinging direction of said plunger pin and substantially aligned with said guiding means;
  - b. a back surface substantially rotationally symmetric with respect to said center axis, said back surface having a continuous curvature that is at a maximum radius in proximity of said center axis and decreases towards a back circumference of said plunger pin such that for a given indenting depth of said back surface into said ACE bottom a relevant deformation in an impinging vicinity of said ACE remains on an overall minimum, said impinging vicinity being immediately adjacent to said impinging back surface;
  - c. a guiding feature corresponding to said guiding means such that said plunger pin is moveable along said center axis at least up to said indenting depth; and
  - d. an electrically conductive pin front end

such that an insulated conductive path is established between said pin front end and said base contact and such that simultaneously an opposing force is exerted from said ACE via said back surface onto said plunger pin while said plunger pin is displaced in one of multiple displacements with said indenting depth along said center axis in direction of said ACE.

14. The probe apparatus of claim 13, wherein said back surface seamlessly transitions into said back circumference.

15. The probe apparatus of claim 13, wherein said back surface has a surface height that is at least equal to said indenting depth.

16. The probe apparatus of claim 13, wherein said maximum radius is infinite.

17. The probe apparatus of claim 13, wherein said back surface is an ellipsoid with a short axis of said ellipsoid's central cross section substantially coincides with said center axis.

18. The probe apparatus of claim 13, wherein said guiding feature is a guide section extending along said center axis.

19. The probe apparatus of claim 18, wherein said back circumference is independent of a guide circumference of said guide section.

20. The probe apparatus of claim 18, wherein said guiding feature is a guiding perforation correspondingly shaped with said guide section such that said plunger pin slides in a guided fashion along said center axis.

21. The probe apparatus of claim 20, wherein said plunger pin further comprising a recess section having a finite length along said center axis, said recess section having a recess circumference that is offset from said guide circumference in direction towards said center axis and wherein said guiding perforation further comprises a retention flange corresponding to said recess section such that said plunger pin is slide able within limits defined by the recess section minus a height of said retention flange, said limits being at least equal to said indenting depth.

22. The probe apparatus of claim 21, wherein said carrier frame is of a material composition and said retention flange is in an offset from said guide circumference towards said center axis such that said retention flange may be non destructively resiliently deformed

during assembly insertion of said  
plunger pin into said guiding  
perforation.

23. The probe apparatus of claim 13, wherein said pin front end has a number of crown peaks substantially rotationally symmetric arrayed with respect to said center axis.